

# Pathways of Integrating the Spirit of Scientists in the New Era into Labor Education for College Students

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## Abstract

The spirit of scientists in the new era encompasses the core tenets of patriotism, innovation, truth-seeking, dedication, collaboration, and nurturing talent. Meanwhile, labor education for college students is a crucial link in cultivating students' labor concepts, skills, and literacy. The two are highly compatible at the levels of "practical education" and "value shaping." Integrating the spirit of scientists into college students' labor education is not only an inevitable requirement for fulfilling the fundamental task of fostering virtue through education but also an important pathway for enhancing the connotation of labor education and cultivating high-quality innovative talents. This paper systematically explores specific pathways for integrating the spirit of scientists into college students' labor education from four dimensions: curriculum integration, practical empowerment, cultural immersion, and evaluation guidance. It aims to provide theoretical reference and practical paradigms for universities to construct an educational system characterized by "spiritual guidance + labor practice."

## Keywords

Spirit of Scientists; Labor Education for College Students; Curriculum Integration; Practical Empowerment.

## 1. Introduction

The "Opinions on Comprehensively Strengthening Labor Education in Schools of All Levels in the New Era" issued by the Central Committee of the Communist Party of China and the State Council in 2020 explicitly states that labor education should "focus on exploring the ideological and political education resources within labor education, guiding students to establish a correct view of labor." The spirit of scientists, formed through the long-term scientific research practices of China's scientific and technological workers, is not only a value benchmark in the field of science and technology but also an important resource for ideological and political education and labor education. Currently, labor education in some universities suffers from issues such as "emphasizing skill training over spiritual guidance" and "focusing on form over substance," leading students to perceive labor merely as "physical exertion," lacking understanding and recognition of "scientific labor" and "creative labor." Integrating the spirit of scientists into labor education can use the "paradigm of labor practice" and "pursuit of spiritual values" of scientists as a guide, allowing students to comprehend the scientific spirit and cultivate patriotic feelings through labor, thereby upgrading labor education from "skill cultivation" to "holistic education."

## 2. The Core Value of Integrating the Spirit of Scientists into Labor Education for College Students

### 2.1. Enriching the Spiritual Connotation of Labor Education

Traditional labor education often focuses on imparting labor skills, such as basic forms like campus cleaning and handicrafts, which can hardly meet the demands of the new era for "innovative labor" and "scientific and technological labor." The "spirit of innovation" within the scientist spirit can guide students to break through the limitations of "repetitive labor" and actively explore new methods and paths in their work. The "spirit of truth-seeking" can cultivate students' rigorous attitude towards labor, avoiding 浮躁 (fickleness) and perfunctoriness during labor processes.

### 2.2. Strengthening the Value Guidance of Labor Education

Some college students currently hold misconceptions such as "looking down on manual labor" and "pursuing easy work," or even exhibit a tendency towards "labor utilitarianism." The "spirit of dedication" and "spirit of patriotism" within the scientist spirit can guide students to establish correct labor values. Mr. Qian Xuesen, who gave up favorable treatment abroad to return to China and contribute to the development of the "Two Bombs, One Satellite" project, with his labor choice of "dedicating everything to the motherland," provides a value demonstration of "labor for the country, labor for society" for college students.

### 2.3. Enhancing the Practical Effectiveness of Labor Education

The spirit of scientists originates from the practice of scientific research labor. Its "spirit of collaboration" and "quality of perseverance" can directly guide students' labor practice behaviors. In team labor, the "spirit of collaboration" can help students learn division of labor, cooperation, and efficient coordination. When facing labor difficulties, the "quality of perseverance" can enable students to overcome fear of challenges and persist in completing tasks.

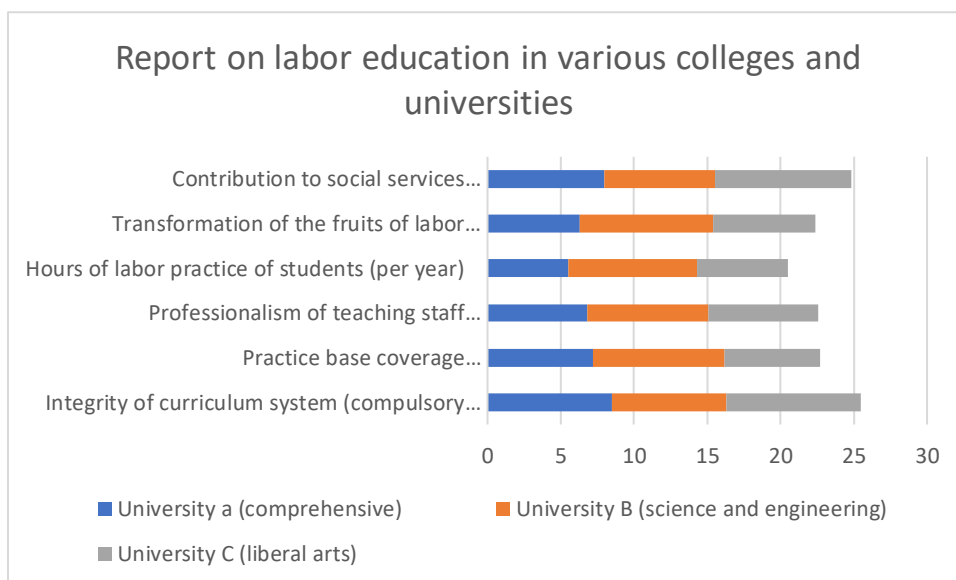


Fig. 1 reflection of labor education in colleges and universities

### **3. Four Major Pathways for Integrating the Spirit of Scientists into Labor Education for College Students**

#### **3.1. Curriculum Integration Pathway: Constructing a "Labor Education + Scientist Spirit" Content System**

The curriculum is the core carrier of educational implementation. Integrating the scientist spirit into labor education curricula requires breaking the current state of "separation of spirit and curriculum," achieving a deep integration from "formal combination" to "content symbiosis." First, the "thematic" design of basic labor education courses: Add a "Scientist Labor Spirit" thematic module in basic courses like labor practice, decomposing the core connotations of the scientist spirit into specific teaching knowledge points. Second, the "scenario-based" connection of specialized labor education courses: Professional labor in different disciplines has distinct industry characteristics, requiring precise alignment of the scientist spirit with professional labor education based on disciplinary features. For science and engineering majors, introduce the "scientists' rigorous labor processes" in specialized labor courses such as experimental teaching and engineering practice.

#### **3.2. Practical Empowerment Pathway: Creating a "Scientific Labor + Scenario Experience" Practice Platform**

The essence of labor education is practical education. Only by allowing students to personally experience practice in "quasi-scientific research labor" scenarios can the scientist spirit be transformed from the "cognitive level" into "behavioral habits." Universities need to build diverse practice platforms for students to perceive and practice the scientist spirit through labor. First, research-based labor practices: Simulate the labor process of scientists; rely on university research resources to set up "College Student Research Labor Workshops," organize students to participate in faculty research projects, and engage in science and innovation competitions, allowing students to experience the scientific labor process of "posing questions - designing solutions - solving problems." Second, service-based labor practices: Practice the dedication spirit of scientists; in line with social needs such as "rural revitalization" and "popularizing science for public benefit," carry out service-based labor practices, allowing students to practice the "nurturing" and "dedication" spirit of scientists through labor serving society.

#### **3.3. Cultural Immersion Pathway: Creating a Campus Ecology of "Labor Atmosphere + Spiritual Guidance"**

Campus culture is an important carrier of implicit education. By integrating the scientist spirit into campus labor culture construction, students can be subtly influenced by the spirit in their daily environment, forming a cultural atmosphere of "advocating scientific labor." First, labor culture carriers: Create visible spiritual spaces; construct thematic cultural carriers for the "Scientist Labor Spirit" on campus, making the spirit visible and tangible. Build a "Scientist Labor Deeds Exhibition Hall," displaying scientists' labor journeys through pictures, physical objects, videos, etc. Also, set up "spiritual markers" at campus labor practice bases, such as labeling experimental fields with "Learn from Academician Yuan Longping, work diligently without cease," or hanging slogans like "Innovation is the soul of scientific labor" in innovation centers, closely integrating the scientist spirit with labor scenarios. Second, labor cultural activities: Conduct immersive spiritual experiences; through themed activities, let students actively participate in the integrated practice of "scientist spirit + labor," deepening spiritual cognition. For example, hold "Scientist Labor Story Sharing Sessions," inviting university researchers and retired scientists to share their labor experiences. Also, organize "Scientific Labor Skills Competitions," requiring students to demonstrate a "rigorous, innovative"

scientific labor attitude in the competition. Furthermore, organize "Scientist Spirit Themed Labor Week" activities, intensively conducting activities like "Research Labor Experience," "Science Popularization Labor Service," and "Labor Story Essay Contests" within a week, allowing students to deeply immerse themselves in the atmosphere of the scientist spirit through intensive labor practices and cultural activities.

### **3.4. Evaluation Guidance Pathway: Establishing a Dual-Dimensional Evaluation Mechanism of "Spiritual Practice + Labor Effectiveness"**

A scientific evaluation mechanism is key to ensuring educational effectiveness. Traditional labor education evaluations often focus on "labor duration" and "labor outcomes," neglecting the assessment of "spiritual practice." Establishing a "spirit + labor" dual-dimensional evaluation mechanism can guide students to actively practice the scientist spirit in labor, avoiding the "disconnect between cognition and behavior." On one hand, set up process evaluation: Decompose the core connotations of the scientist spirit into observable, quantifiable labor behavior indicators and incorporate them into the process evaluation of labor education. Develop differentiated evaluation standards based on different types of labor. On the other hand, set up incentive evaluation: Establish role models for "scientific labor" through commendations and rewards, forming a positive incentive orientation. For example, commend students who demonstrate the scientist spirit in labor, awarding honorary certificates and material rewards; publicize the labor deeds and spiritual practice cases of award-winning students, guiding students to value the integration of spirit and labor.

## **4. Safeguard Measures for Integrating the Spirit of Scientists into Labor Education for College Students**

### **4.1. Strengthening the Teaching Staff**

Teachers are the key force in educational implementation. It is necessary to enhance teachers' ability to "explore resources related to the scientist spirit and design integrated teaching plans." Universities can organize labor education teachers and specialized course teachers to learn about the connotations of the scientist spirit and integration pathways through methods like "thematic training" and "teaching research activities." Invite research staff and ideological and political course teachers to participate in "interdisciplinary teaching research teams" to jointly develop teaching cases and curriculum resources for "Scientist Spirit + Labor Education," ensuring the professionalism and scientific nature of the integrated education.

### **4.2. Improving the Resource Support System**

Integrate internal and external resources to provide guarantees for integrated education. On one hand, universities need to increase investment in labor practice bases and cultural carriers, constructing hardware facilities such as "Research Labor Workshops" and "Scientist Deeds Exhibition Halls." On the other hand, strengthen cooperation with research institutes, enterprises, and rural areas to expand practical scenarios like "research internships" and "assisting agriculture through technology," providing students with diverse labor practice platforms.

### **4.3. Establishing a Collaborative Education Mechanism**

Build a collaborative education system involving "school - family - society." Schools can use channels like parent-teacher meetings and campus open days to promote the concept of "integrating the scientist spirit into labor education" to parents, guiding them to value the cultivation of "spiritual qualities" in their children's labor. At the societal level, leverage media to publicize typical cases of "scientific labor," creating a social atmosphere of "respecting

scientific labor and upholding the scientist spirit," providing external support for the integrated education in universities.

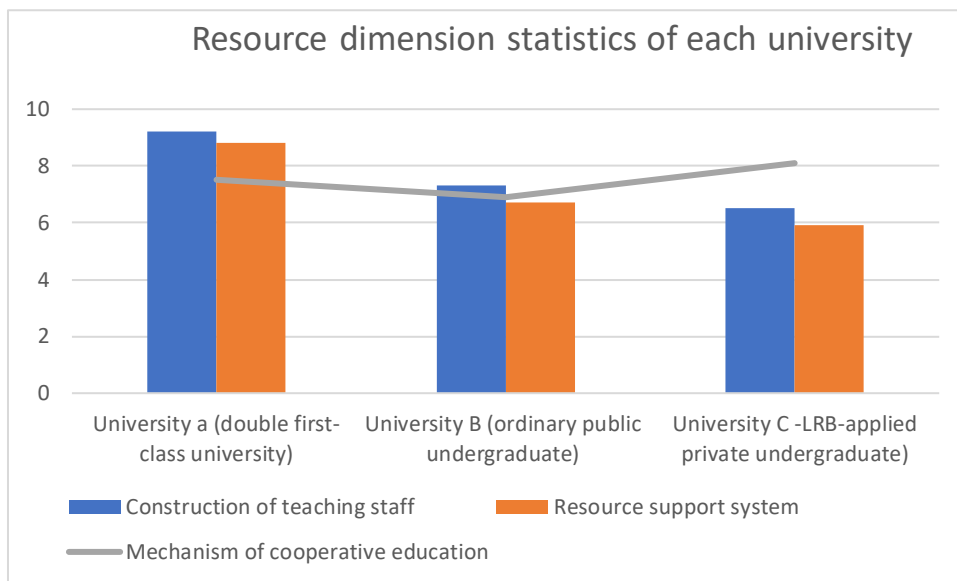


Fig. 2 the statistics of each university resource dimension

### 5. Conclusion

Integrating the spirit of scientists in the new era into labor education for college students is a systematic educational project. Through curriculum integration, "knowledge and spirit coexist"; through practical empowerment, "cognition and behavior transform"; through cultural immersion, "atmosphere and spirit influence"; and through evaluation guidance, "process and effect are safeguarded." These four pathways interconnect and synergize to construct an educational system of "spiritual guidance + labor practice." This integration can not only enhance the connotation and quality of labor education but also cultivate college students in the new era who possess "scientific literacy, labor ability, and patriotic feelings," providing talent support for realizing the great rejuvenation of the Chinese nation. In the future, universities need to continuously explore the innovation and optimization of integration pathways, allowing the scientist spirit to exert stronger educational vitality in labor education.

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